

Two Species of *Anaspis* (Col.: Mordellidae¹) New to Britain; with a Consideration of the Status of *A. hudsoni* Donis., etc.

By A. A. ALLEN²

1. *Anaspis bohémica* Schilsky, 1899, *Käf. Eur.*, **35**: 88 (= *forticornis* Schil., *norvegica* Munst.)—A black species, one of a small group of *Anaspis* s.str. in which the primary ventral appendages of the male are borne by the 2nd instead of the 3rd sternite; the only other British species being the very different *A. lurida* Steph. As will be evident from the key (section 3), *A. bohémica* differs from any of its British allies in a number of definite features, of which—apart from those peculiar to the male—one of the best lies in the strongly elongate terminal segment of the antennae (which are stout for the size of the beetle). The pronotum is more transverse than in our other species, whilst in the male the anterior tarsi and the ventral appendages are highly characteristic, the latter not only in the above-mentioned respect but also in forming an inverted Y-shaped structure. Hansen (1958: 219) contrasts the species with the larger and common *A. frontalis* L., which is done here too in the key that follows—though the two are not really closely related. In general facies *bohémica* perhaps more resembles a small melanoid *rufilabris* Gyll. and indeed has more than once been mistaken for *hudsoni* Donis. (*q.v. infra*); but most of the points separating it from *frontalis* apply here also, while the antennae and male front tarsi are quite different. Dark forms of *garneysi* Fowl., *pulicaria* Costa, *humeralis* F. and *regimbarti* Schil. have slender antennae and thin front tarsi in both sexes. As pointed out in section 4, the aedeagus is figured by Buck (1954: 19, fig. 45) as that of *hudsoni*.

Several specimens of *A. bohémica* were beaten off broom (*Sarothamnus*), doubtless in flower, in the garden of Forest Lodge at Nethy Bridge, Inverness-shire, on 22.vi.51 and perhaps other dates, by the late G. H. Ashe and recorded as *A. hudsoni* (Ashe, 1952: 167). Two males that he sent me were recognised much later as the present species from Hansen (1958: 219-220). *A. bohémica* appears to be mainly boreomontane in Europe, extending from Austria and Czechoslovakia to Scandinavia but later found also in Denmark and Holland, and regarded as very rare (Ermisch, 1969: 191). In Britain it may be overlooked through having been confused with others, but will most likely prove confined to the Scottish Highlands. Further material should be in Ashe's collection in Torquay Museum over the label *hudsoni*. In Denmark it has been beaten from the male flowers of pine, and so may possibly be associated in the early stages with conifers.

¹ The Anaspidinae are located in the Scrautiidae by a few modern authors on the grounds of certain larval characters. However, the adults conform so strikingly overall to the peculiar structure of Mordellidae (except in lacking the pygidial spine) that their traditional position in the latter family seems the more natural, and is adopted by Ermisch (1969).

² 49 Montcalm Road, London SE7 8QG.

2. *Anaspis schilskyana* Csiki in Junk, 1915, *Col. Cat.*, 63: 65 (= *lateralis* Gyll., *marginicollis* Lindb.).—Another species of *Anaspis* s.str., more closely akin than the last to *A. frontalis* L., of which it was first described by Schilsky as a variety ('var. B'). It differs, however, from that species in several critical points of structure, average smaller size, etc., and in fact is decidedly nearer in most respects to *A. garneysi* Fowler—a species little known to Continental authors of the last century. With this, *schilskyana* agrees above all in the formation of the antennae and male anterior tarsi (both slender, unlike those of *frontalis*); but differs in the shape of the male front and middle tibiae, and especially in the ventral characters of the same sex which are of the *frontalis* type. This last difference is partly visible even in side-view, where the peculiar form of the laciniae in *garneysi* but not in *schilskyana* is associated with an abrupt change of level between sternites 3 and 4. There are, moreover, two pronotal features that separate the present species not only from either of the above but also from practically any other with which confusion might be possible: the lighter colour of the pronotum at least at sides and towards hind angles, and the outline of its side-margin in the latter region (see the key below).

I recently detected a male of *A. schilskyana* amongst my material of *A. garneysi*—taken, again by G. H. Ashe, at Blenheim, Oxfordshire (1.vi.53). He must have passed it as a slightl teneral or variant specimen of the last-named, as I myself did at first, but a close inspection and comparison quickly proved decisive. The description and figures by Hansen (1945: 68, 69, 72-3) are very clear and accurate, and the above specimen agrees with them in every detail—as also with a Swedish male sent to me many years ago by Dr Th. Palm. According to Ermisch (p. 192) *A. schilskyana* is north-European, very rare in Germany on the north and east coasts only. Hansen (p. 73) gives three Danish localities and writes (I translate): "especially on flowering whitethorn standing near old oaks, in June. Larvae are found in half-dry, red-rotten oak wood in January and adults eclode in April". It is of interest to note that the single British example yet known was most likely taken in Blenheim Park, an ancient forest locality with many old oaks, in which Ashe certainly collected.

3. Key to the above two species and their nearest British allies; with remarks on a few others.

- (Largely black species, at least elytra wholly black; antennae with segments 7-10 more or less conical and not moniliform—cf. *A. rufilabris* and its allies.)
- 1/4 Antennae relatively stout, segments 8-10 not longer than broad. *Male*: front tarsi at least in part strongly dilated, the widest part at least as wide as apex of tibia. (Front and middle tibiae not sinuate on either edge; straight, or the former curving a little outward.)
- 2/3 Smaller species (L. 2.5-3.4 mm.), suboblong, less elongate, less convex; head black, segment 1 of antennae darkened; 11 unusually elongate, twice as long as broad and twice as long as 10; maxillary palpi much smaller (about as in *maculata* Geof.), dark; pronotum strongly transverse, hind angles rounded off in lateral view; the two mid-tibial spurs subequal in length; middle and hind tibiae, seen

from above, differing hardly at all in form and not very much in length. (Legs dark or largely so, segments 2-3 of antennae light.)

- Male*: front tarsi as long as the tibiae; segment 1 longer than, and about as wide as, 2. Appendages arising from sternite 2 and and borne on a common stem almost as long as the short divergent laciniae; sternite 3 bearing a short truncate process with tufted apex; 5 without median impression, but having a deep narrow apical incision continued to base as a furrow *bohémica*
- 3/2 Larger species (L. 3-4.5 mm.), fusiform, more convex and elongate; front of head and segment 1 of antennae clear flavous; 11 little longer than broad and little longer than 10; maxillary palpi much larger (proportionately), seldom all dark; pronotum feebly transverse to quadrate, hind angles marked in lateral view; the two mid-tibial spurs plainly unequal in length; hind tibiae much shorter and more rapidly dilating to apex than middle pair.

- Male*: front tarsi shorter than tibiae, segment 1 much shorter and narrower than 2. Appendages arising from sternite 3, without a common stem, long, reaching about middle of 5 and incurved at apex; sternite 5 deeply impressed medially, having a broad deep rounded-triangular incision apically *frontalis*
- 4/1 Antennae long and slender, segments 8-10 plainly longer than broad. *Male*: front tarsi slender, linear, narrower than apex of tibia, with segment 1 the longest.

- 5/6 Pronotum distinctly paler (yellow-brown) at sides, especially behind, even the disc sometimes paler (pitchy-brown) than elytra; sides rather straightly widened to extreme base, in lateral view sinuate with the angles 90° or less.

- Male*: front tibiae slightly incurved; middle tibiae linear, scarcely thickened towards apex, outer edge practically straight, inner subsinuate, giving a slight (post) median constriction; segment 1 of middle tarsi shorter, not or barely constricted medially. Appendages and sternite 5 almost as *frontalis* (3/2), but the latter unimpressed, and sternite 4 with a pair of small short secondary laciniae normally hidden by the primaries; these approximate at base, the contours normal *schilskyana*
- 6/5 Pronotum unicolorous black, sides a little rounded behind so as to be widest before base, not or hardly sinuate in lateral view with the angles well over 90°.

Male: front tibiae straight; middle tibiae steadily thickened to apex, outer edge slightly outcurved, inner practically straight; segment 1 of middle tarsi longer, a little constricted medially. Appendages widely distant at base, strong, caliper-like, curved inward and also concavely, enclosing between them a broad shining excavation; the secondary pair (from sternite 4) following, and lying dorsal to, the primaries *garneysi*

It is noteworthy that the two species here added to our list appear very scarce on the Continent—an indication of their probable relict status in Britain. In contrast, *A. (Nassipa) flava* L., found commonly over most of Europe, is still not known from this country. Collectors should keep a sharp look-out for it; the species might easily pass as the closely allied *A. costai* Em. if the lack of appendages in the male were not noticed. Another which could be overlooked is *A. ruficollis* F. (nec auct. Brit.), very like our common *A. regimbarti* Schil. but with uniformly pale elytral pubescence.

A. florenceae Donis. is now rightly regarded as a black form of *maculata* Geof.; it appears to be not uncommon in some districts.

The species that has stood for some time in the British list as *latipalpis* Schil. is now considered to be a mere colour-form of *thoracica* L., and so must take the latter name with us.

Champion (1898), when introducing it (as *latipalpis*), remarked that it and *subtestacea* Steph. (now *lurida* Steph.) "are apparently about equally common in Britain", having taken each species in three different localities; while Joy (1932a) gives *latipalpis* as common, but *subtestacea* as local. My experience is very different: I find *lurida* quite general in the south-east—though seldom if ever abundant—but *thoracica* very local and scarce hitherto, and can record it (in the male sex) only from Berks. (Windsor, 1), Bucks. (Hell Coppice, 1 or 2), and Kent (Ham Street Woods, 2). Such a change as this suggests in the relative incidence of a pair of species over a longer or shorter period is by no means unexampled. Note that *all* the characters given by Buck (p. 20) for separating these two species—not merely that relating to the antennae—apply to males only; females may be hard to distinguish, except by the slightly broader apical joint of the palpi in *thoracica*.

It will be as well to point out a curious double error in Fowler (1891) concerning the antennae of *A. frontalis*. Firstly, he writes (p. 17, 1.10) "joints 6-10 gradually increasing in length". This recurs in the key on the previous page, where "increasing gradually in length" can be rectified by substituting "gradually becoming conical in form". Secondly, his statement "Male with the antennae longer than in female" (p. 75, 1.16) is incorrect for this species, individuals of the same size but opposite sex having antennae of equal length; whilst oddly enough under *garneysi*, where the statement would have been correct, he does not make it. (The disparity in antennal length between the sexes is most marked in *humeralis*, among our species.) The figure of the *frontalis* antenna given by Joy (1932b) is accurate, except that segments 3 and 4 should be stouter; that of the female hardly differs.

4. The status of *Anaspis hudsoni* Donisthorpe (1909).—This has seemed to many of us an unsatisfactory species, not sharply enough distinguished from *rufilabris* Gyll.; it was ignored by Joy (1932), though admittedly that has little significance. The description based on a single male is detailed (Fowler & Donisthorpe's version of 1913 is shortened); yet, with one apparent exception accounted for below, nothing in it definitely excludes the species just named³; while, significantly, the latter is *not* among those compared by the author with his *hudsoni*. As he expressly states having examined all our species and gives figures of their male appendages, this oversight is indeed strange. His one reference to *rufilabris* vis-à-vis *hudsoni* is in a later note (1911) recording a female of the latter, but it is hardly convincing. The one material character that does appear at first sight to uphold the claim of *hudsoni* to specific rank concerns sternite 5 of the male abdomen, which should be unusually elongate and lack the deep cleft or split in the apical margin possessed by *rufilabris* (though often overlooked). Both this

³ The epithet "sparse" applied in the description to the pubescence must be a mistake; all *Anaspis* are densely pubescent.

crucial point, and the retention of *hudsoni* as a good species by Buck (1954), require notice.

As to the first, I believe the supposed difference can be explained as due to an artifact. Examination of the type shows the 6th segment—normally in an *Anaspis* concealed within the 5th, though often with the apex visible—to be further extended than usual, as can be seen by viewing the tip of the inverted abdomen from a little beneath. Looked at from above (i.e. in the ventral aspect, the abdomen being mounted separately with venter uppermost), it seems that the apical margin of the 5th is stuck down upon the projecting 6th so that the actual outline of the former is all but invisible; however, with suitable lighting, a deep cleft such as exists in *rufilabris* can just be made out. In effect, therefore, the 5th sternite has been provided fortuitously with a false *entire* apical margin, also making it appear still longer; compare fig. 1 (*hudsoni*) in Fowler & Donisthorpe, plate A, with fig. 5 (*rufilabris*)—which, be it noted, is substantially identical with Buck's figure for *hudsoni* (see below). In fact the description mentions "the appearance of a sixth segment". There is further (in the author's words, and shown in his figure) "a small pit or depression . . . the lips of which appear to be slightly raised". This formation, however, is normal to *rufilabris*, though not always clearly visible unless the segment is extended (as in '*hudsoni*') or separated; the elongate pit or furrow is continuous with the apical cleft, at whose proximal end it lies.

There remains the double difficulty that Buck (1954) figures both the male appendages and aedeagus, under these names, of what must be different species.

Regarding these figures, however, two facts emerge: first, no one has been able to find an *Anaspis* with biflexuous appendages as in fig. 33 (p. 18), representing *rufilabris*—the species known by that name both here and on the Continent⁴ having them straight, as figured by Buck for *hudsoni* (fig. 34); and second, whilst the aedeagus of *rufilabris* is recognisably as shown, the figure purporting to be that of *hudsoni* (45, p. 19) exactly matches the aedeagus of *bohemica* Schil. (see section 1). A male of that species must therefore have been unwittingly used for the *hudsoni* figure—indeed, in the type of the latter insect the organ does not seem to have been dissected out. The figure of the *rufilabris* appendages, just remarked on, is less easily explained, and it would appear almost as though an unknown species were in question. Unfortunately Mr Buck was unable to trace the specimen from which the figure was drawn.

A few records of *A. hudsoni* have appeared in recent years, doubtless based on Buck's fig. 34. In earlier times, as far as I know, only Hudson Beare (1919) claimed to recognise it in several specimens from the type locality, Nethy Bridge, Inv.—oddly enough the sole locality yet known for *A. bohemica* in Britain.

⁴ I have had males of *rufilabris* from Dr A. Strand, Oslo, which agree in all respects with our insect.

From the facts adduced here, I think it will be generally admitted that the so-called species *hudsoni* Donis. must sink as a synonym of the rather common *rufilabris* Gyll.

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Postscript

In the preparation of the foregoing notes, a relevant paper was unfortunately overlooked, which—though necessitating no material change in what I have already written—ought at least to have been included in the bibliography: Donisthorpe, 1930, The British species of *Anaspis* Geoffroy, *Ent. mon. Mag.*, **66**: 249-252, & Plate IX. Here the author admits that the figures by Dollman that he had given earlier (1909, 1913) are not quite satisfactory nor always accurate, and therefore furnishes an improved set of drawings of the ♂ appendages. In this plate, the close similarity between figs. 7 and 10 (*maculata*, *florenceae*) and between figs. 13 and 14 (*rufilabris*, *hudsoni*) must surely have been noticed by him, yet, if so, he failed to draw the obvious conclusion.

The two last-mentioned figures are instructive in that 14 (*hudsoni*) almost perfectly represents what one would conceive as the result of extending the segments of 13 (*rufilabris*) well beyond the normal; the only real difference being that the 5th sternite is shown with an entire instead of notched hind margin. Even this difference, however, is weakened by the tell-tale mark the artist has inserted which shows that she had perceived (though misinterpreted) an emargination. In his accompanying text-note on *hudsoni* (p. 251), Donisthorpe, though not grasping the significance of this mark, does point out that what he had originally described as “the appearance of a 6th segment” is in fact—viewed under a high power—a true 6th segment extended beyond the 5th.

All this seems to support the explanation above put forward for the supposed specific characters of *A. hudsoni*.